03.01-06/16/94-01492

Halliburton NUS CORPORATION

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C-49-06-4-225

June 16, 1994

Project Number 1454

Commander
LANTNAVFACENGCOM - (Mr. Art Wells, Mail Code 1823)
1510 Gilbert Street
Norfolk, VA 23511-2699

Reference: CLEAN Contract N62472-90-D-1298
Contract Task Order No. 165

Subject: Final Submission of Second Work Plan Addendum
Sites 1 through 5, Site Characterization and Evaluation
Naval Aviation Depot, MCAS Cherry Point, North Carolina

Dear Mr. Wells:

As directed by the scope change memo dated June 9, 1994 Halliburton NUS has prepared the enclosed Final Work Plan Addendum detailing the additional sampling and analysis necessary to complete the Site Characterization Investigation. Please note that a scope change memo dated June 10, 1994 was received by our office on June 14, 1994 and that the requested cost impact letter is currently being prepared. The funding remaining on CTO 165 is not sufficient to allow performance of the additional sampling, therefore the funding requested by that cost impact letter will be needed prior to mobilization to perform work.

If you have any questions on this submittal, I can be contacted at (412) 921-8524.

Sincerely,

J. Randall Elder, P.E.
Project Manager

JRE/jre
Enclosure

cc: Mr. Roger Boucher, NORTHDIV (letter only)
Ms. Renee Henderson, MCAS Cherry Point
Mr. Gary McSmith, LANTDIV
Mr. John Trepanowski, Halliburton NUS, Wayne
Mr. Matt Cochran, Halliburton NUS
Ms. Debra Wroblewski, Halliburton NUS, Pittsburgh, (letter only)
File 1454

## 1.0 INTRODUCTION

Add the following after the existing text:

"This addendum was produced in response to a scope change memo dated June 9, 1994 from the Navy requesting revisions to the approved Work Plan.

As a result of discussion between the State of North Carolina, USEPA Region IV, the LANTDIV, MCAS Cherry Point, and Halliburton NUS, additional sampling for surface soils (or where concrete is present the soils immediately below the soil/concrete interface) was agreed upon. The purpose of this addendum is to detail the additional work including; number and location of samples, analytical parameters, and the rationale for sample selection.

The detection limits achieved are a result of the methods chosen for analysis and are deemed appropriate based on current contaminant background information, action levels, and intended use of the data."

## APPENDIX A - FIELD SAMPLING PLAN

## 2.0 SAMPLING OBJECTIVES

Add the following after the existing text:

"Additional samples will be collected at the surface to supplement data obtained in the initial investigation. These samples will be used to perform risk calculations for "construction worker" and "office worker" scenarios. The data will also provide discrete concentrations for composite samples which indicated contamination in the initial investigation.

Also one composite concrete chip sample will be taken from the area of the proposed sewer alignment at Site 3. This sample will be used to characterize the debris which may require waste management."

## 3.0 SAMPLING LOCATION AND FREQUENCY

Add the following after the existing text:

"Soil samples will be collected from 0-1 feet below surface(or where concrete is present from the 0-1 foot interval directly below the concrete). The soil will be analyzed for TCL volatiles, TCL semi-volatiles, TCL pesticide/PCBs, TAL metals/cyanide, low/medium/high TPHs, and oil and grease. In all cases sampling locations were chosen to provide information in areas of potential worker exposure (i.e. utility excavations and floor slab construction) while still providing full coverage of each site.

The concrete chip sample will be collected from two locations along the proposed sewer alignment. This sample will be prepared by TCLP and analyzed for TCLP list organics and metals. The TCLP results will be evaluated in conjunction with current regulatory requirements to determine proper waste management practices (e.g. disposal). Tables

3-1 through 3-5 summarize the proposed analytical program for each site. The site-specific sampling locations and rationale is discussed in Sections 3.1 through 3.5."

## 3.1 SITE 1

Add the following after the existing text:

"Discrete surface soil (0-1 foot depth) samples will be taken at sample locations SB01 through SB10, and SB13. Locations SB01 through SB10 will be analyzed for TCL pesticide/PCBs in order to determine the local concentrations of pesticide contamination which was indicated by composite samples analyzed during the initial investigation. In addition locations SB01, SB05, and SB13 will be analyzed for TCL volatiles, TCL semi-volatiles, TAL metals/cyanide, low/medium/high TPHs, and oil and grease. In addition SB13 will be analyzed for TCL pesticide/PCBs.

Figure 3-1 shows the locations of the soil samples taken during the initial investigation, the maximum depth sampled, areas of proposed excavation, and proposed surface soil sample locations.

**TABLE 3-1**

**SITE 1 SURFACE SOIL SAMPLES**

| PARAMETER | MEDIA | NO. OF SAMPLES | SAMPLE LOCATIONS |
|---|---|---|---|
| TCL volatiles | soil | 3 | SB01, SB05, and SB13 |
| TCL semi-volatiles | soil | 3 | SB01, SB05, and SB13 |
| TCL pesticide/PCBs | soil | 11 | SB01 through SB10, and SB13 |
| TAL metals/cyanide | soil | 3 | SB01, SB05, and SB13 |
| TPH (low boiling point) | soil | 3 | SB01, SB05, and SB13 |
| TPH (medium/high boiling point) | soil | 3 | SB01, SB05, and SB13 |
| Oil and grease | soil | 3 | SB01, SB05, and SB13 |

"

## 3.2 SITE 2

Add the following after the existing text:

"Discrete surface soil (0-1foot depth) samples will be taken at sample locations SB01 through SB06. These samples will be analyzed for TCL pesticide/PCBs and TCL semi-volatiles in order to determine the local concentrations of PCB contamination which was indicated by composite

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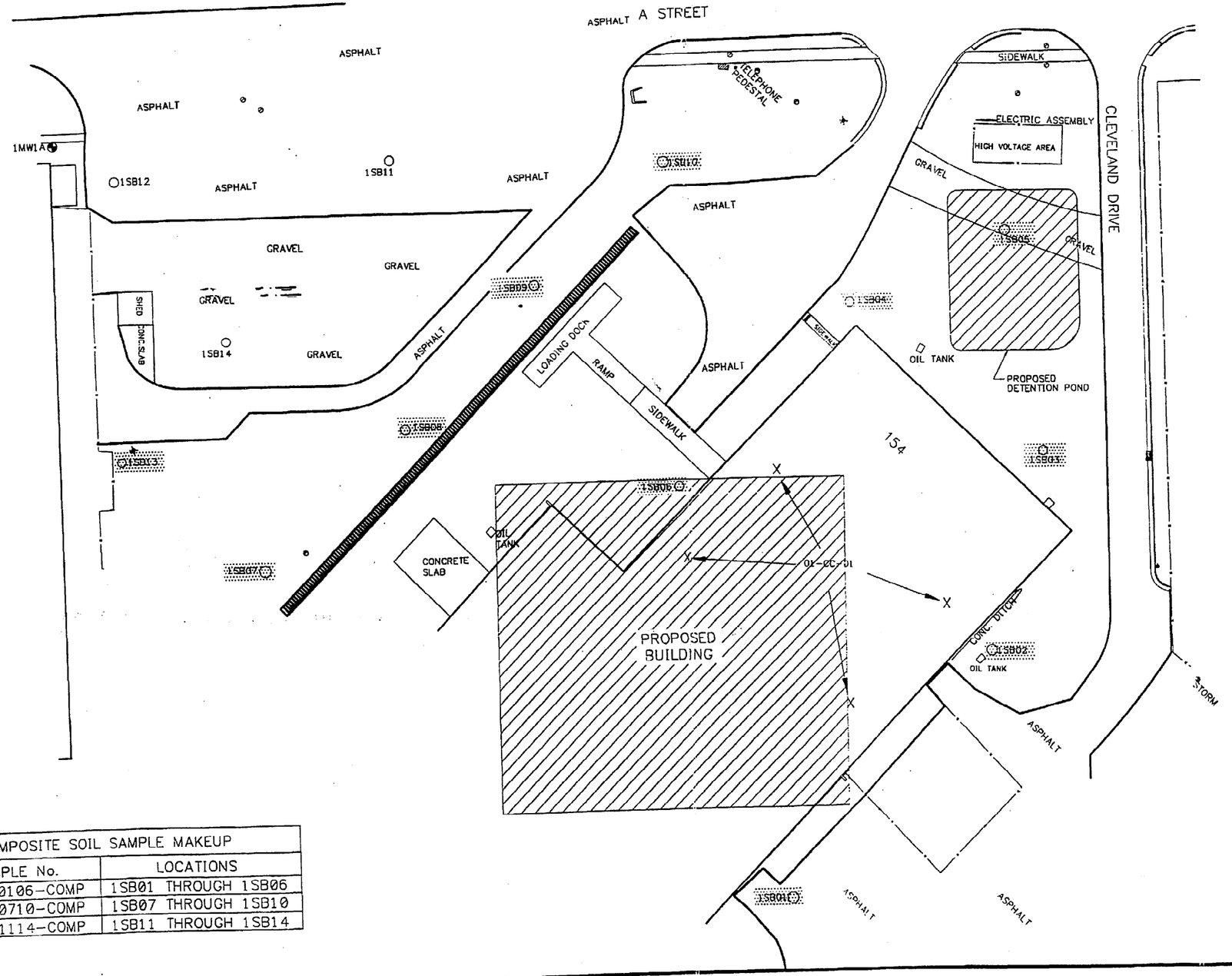


| COMPOSITE SOIL SAMPLE MAKEUP | |
|---|---|
| SAMPLE No. | LOCATIONS |
| 01-S0-0106-COMP | 1SB01 THROUGH 1SB06 |
| 01-S0-0710-COMP | 1SB07 THROUGH 1SB10 |
| 01-S0-1114-COMP | 1SB11 THROUGH 1SB14 |

NOTE:
1. THE LOCATION OF 1SB10 IS APPROXIMATE
2. ALL SAMPLES TAKEN AT A DEPTH OF 3'-5' FEET BELOW SURFACE.

LEGEND
- O SOIL SAMPLE
- TEMPORARY WELL POINT
- X CONCRETE CHIP
- SURFACE SOILS TO BE SAMPLED

FIGURE 3-1

SITE 1 (MCON P-962T)
SITE MAP
MCAS CHERRY POINT, NORTH CAROLINA

0 60 120
SCALE IN FEET

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samples analyzed during the initial investigation. In addition locations SB01, SB02, and SB06 will also be analyzed for TCL volatiles, TAL metals/cyanide, low/medium/high TPHs, and oil and grease.

Figure 3-2 shows the locations of the soil samples taken during the initial investigation, the maximum depth sampled, areas of proposed excavation, and proposed surface soil sample locations.

**TABLE 3-2**

**SITE 2 SURFACE SOIL SAMPLES**

| PARAMETER | MEDIA | NO. OF SAMPLES | SAMPLE LOCATIONS |
|---|---|---|---|
| TCL volatiles | soil | 3 | SB01, SB02, and SB06 |
| TCL semi-volatiles | soil | 6 | SB01 through SB06 |
| TCL pesticide/PCBs | soil | 6 | SB01 through SB06 |
| TAL metals/cyanide | soil | 3 | SB01, SB02, and SB06 |
| TPH (low boiling point) | soil | 3 | SB01, SB02, and SB06 |
| TPH (medium/high boiling point) | soil | 3 | SB01, SB02, and SB06 |
| Oil and grease | soil | 3 | SB01, SB02, and SB06 |

"

## 3.3 SITE 3

Add the following after the existing text:

"A discrete surface soil (0-1foot depth) samples will be taken at sample location SB04. This sample will be analyzed for TAL metals only, since the initial investigation indicated no organic contaminants were detected at the method detection limits utilized.

Figure 3-3 shows the locations of the soil samples taken during the initial investigation, the maximum depth sampled, areas of proposed excavation, and proposed surface soil sample locations.

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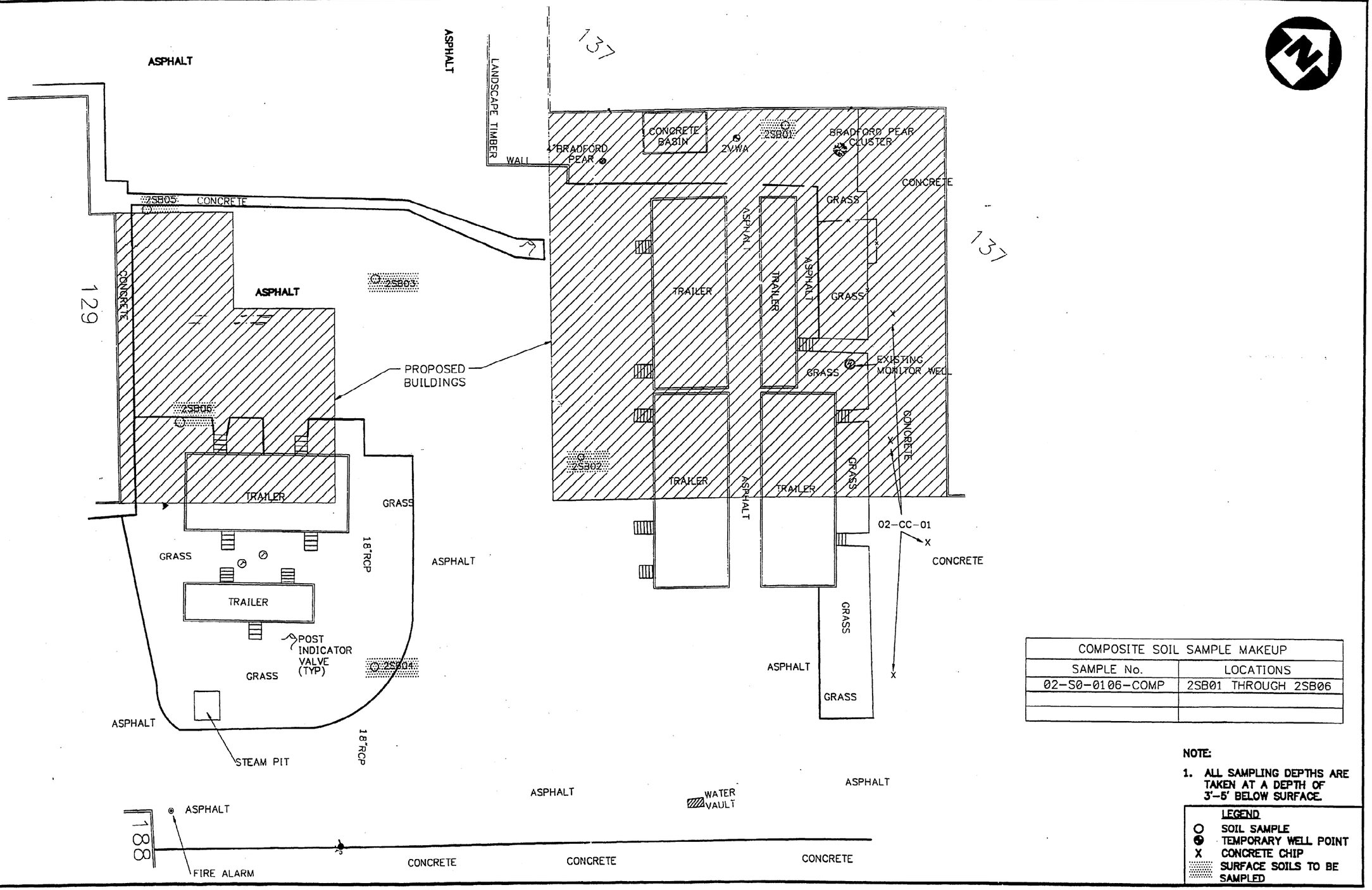


| COMPOSITE SOIL SAMPLE MAKEUP | |
|---|---|
| SAMPLE No. | LOCATIONS |
| 02-S0-0106-COMP | 2SB01 THROUGH 2SB06 |
| | |
| | |

**NOTE:**

1. **ALL SAMPLING DEPTHS ARE TAKEN AT A DEPTH OF 3'-5' BELOW SURFACE.**

**LEGEND**

- **SOIL SAMPLE**
- **TEMPORARY WELL POINT**
- **CONCRETE CHIP**
- **SURFACE SOILS TO BE SAMPLED**

FIGURE 3-2

SITE 2 (MCON P-966T)
SITE MAP
MCAS CHERRY POINT, NORTH CAROLINA

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SCALE IN FEET

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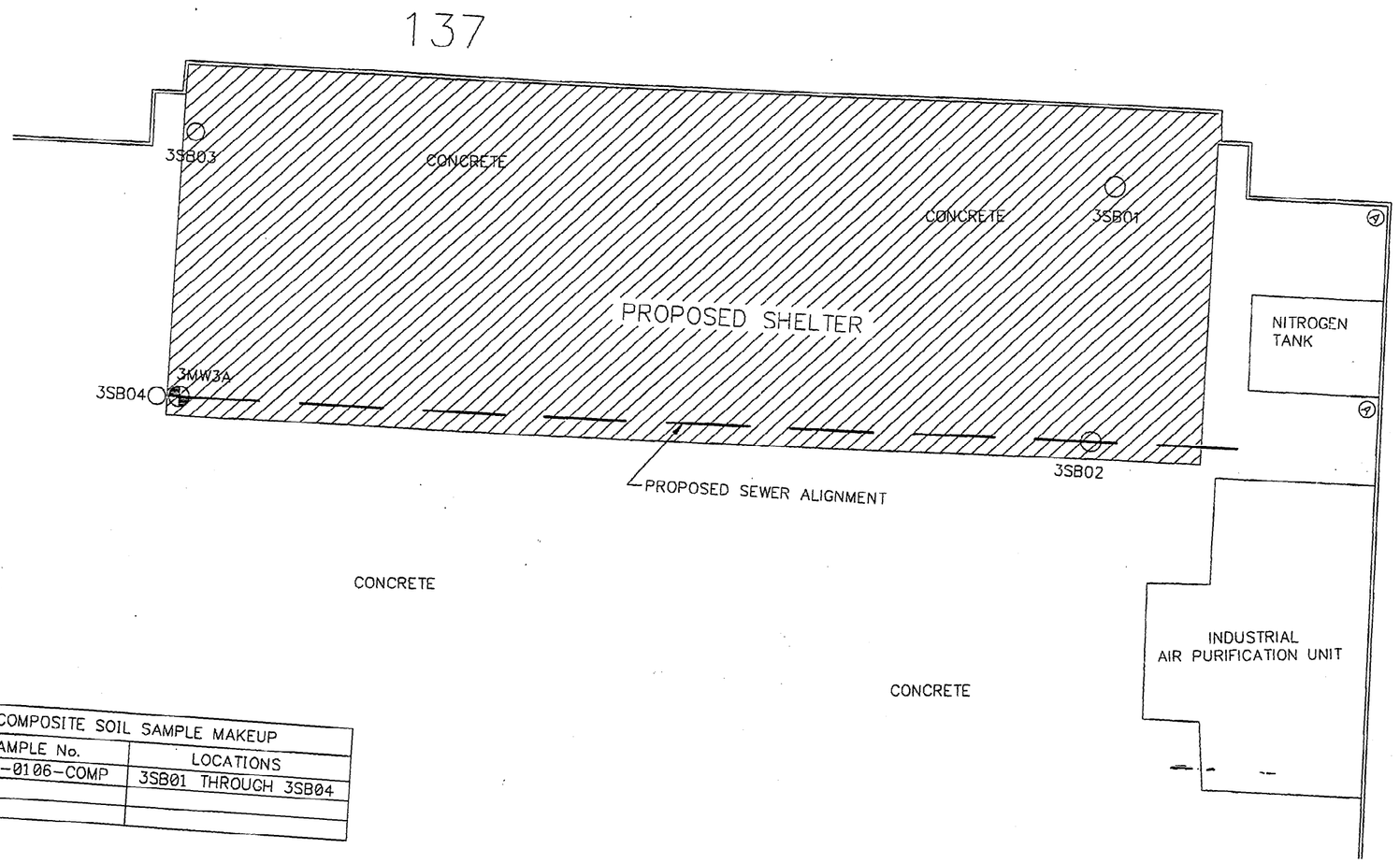


| COMPOSITE SOIL SAMPLE MAKEUP | |
|---|---|
| SAMPLE No. | LOCATIONS |
| 03-S0-0106-COMP | 3SB01 THROUGH 3SB04 |
| | |
| | |

NOTE:

1. SAMPLES 3SB03 AND 3SB01 TAKEN AT 3'-5' BELOW SURFACE. SAMPLES 3SB02 AND 3SB04 TAKEN AT 3'-5' AND 7'-9' BELOW SURFACE.

LEGEND
- SOIL SAMPLE
- TEMPORARY WELL POINT
- X CONCRETE CHIP
- SURFACE SOILS TO BE SAMPLED

SITE 3 (MCON P-966T)
SITE MAP
MCAS CHERRY POINT, NORTH CAROLINA

0 20 40
SCALE IN FEET

FIGURE 3-3

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**TABLE 3-3**

**SITE 3 SURFACE SOIL SAMPLES**

| PARAMETER | MEDIA | NO. OF SAMPLES | SAMPLE LOCATIONS |
|---|---|---|---|
| TAL metals/cyanide | soil | 1 | SB04 |
| TCLP organics and metals | concrete | 1 | Along proposed sewer alignment |

"

## 3.4 SITE 4

Add the following after the existing text:

"Discrete surface soil (0-1foot depth) samples will be taken at sample locations SB10, SB12, and SB15 and will be analyzed for TCL volatiles, TCL semi-volatiles, TCL pesticide/PCBs, TAL metals/cyanide, low/medium/high TPHs, and oil and grease.

Figure 3-4 shows the locations of the soil samples taken during the initial investigation, the maximum depth sampled, areas of proposed excavation, and proposed surface soil sample locations.

**TABLE 3-4**

**SITE 4 SURFACE SOIL SAMPLES**

| PARAMETER | MEDIA | NO. OF SAMPLES | SAMPLE LOCATIONS |
|---|---|---|---|
| TCL volatiles | soil | 3 | SB10, SB12, and SB15 |
| TCL semi-volatiles | soil | 3 | SB10, SB12, and SB15 |
| TCL pesticide/PCBs | soil | 3 | SB10, SB12, and SB15 |
| TAL metals/cyanide | soil | 3 | SB10, SB12, and SB15 |
| TPH (low boiling point) | soil | 3 | SB10, SB12, and SB15 |
| TPH (medium/high boiling point) | soil | 3 | SB10, SB12, and SB15 |
| Oil and grease | soil | 3 | SB10, SB12, and SB15 |

"

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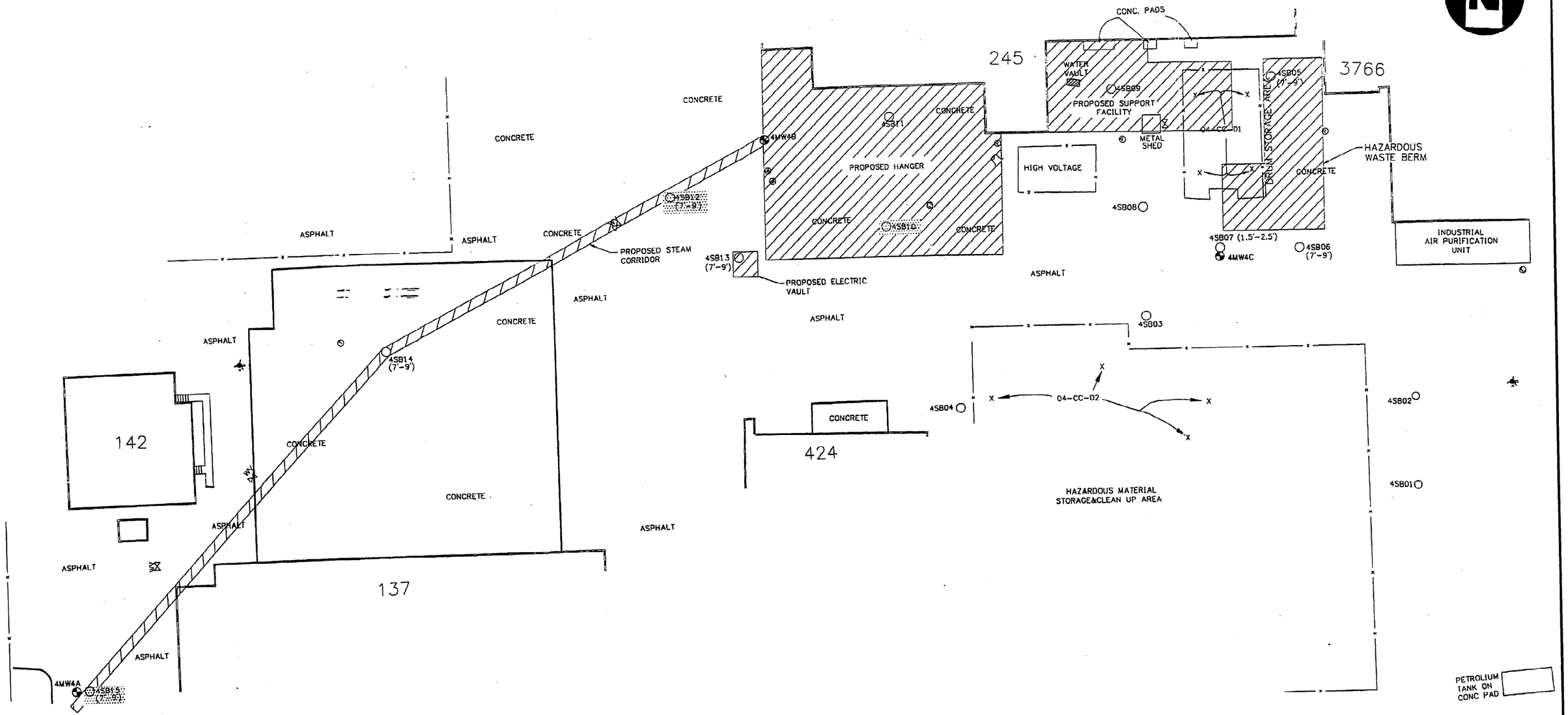


| COMPOSITE SOIL SAMPLE MAKEUP | |
|---|---|
| SAMPLE No. | LOCATIONS |
| 04-S0-0104-COMP | 4SB01 THROUGH 4SB04 |
| 04-S0-0507-COMP | 4SB05 THROUGH 4SB07 |
| 04-S0-0811-COMP | 4SB08 THROUGH 4SB11 |
| 04-S0-1215-COMP | 4SB12 THROUGH 4SB15 |
| 04-S0-1618-COMP | 4SB12 THROUGH 4SB15 |

NOTE:

1. ALL SAMPLING DEPTHS ARE TAKEN AT A DEPTH OF 3'-5' BELOW SURFACE.

LEGEND

- O SOIL SAMPLE
- TEMPORARY WELL POINT
- X CONCRETE CHIP
- SURFACE SOILS TO BE SAMPLED

FIGURE 3-4

SITE 4 (MCON P-965T)
SITE MAP
MCAS CHERRY POINT, NORTH CAROLINA

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SCALE IN FEET

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## 3.5 SITE 5

Add the following after the existing text:

"A discrete surface soil (0-1foot depth) sample will be taken at sample location SB03 and will be analyzed for TCL volatiles, TCL semi-volatiles, TCL pesticide/PCBs, TAL metals/cyanide, low/medium/high TPHs, and oil and grease.

Figure 3-5 shows the locations of the soil samples taken during the initial investigation, the maximum depth sampled, areas of proposed excavation, and the proposed surface soil sample location.

**TABLE 3-5**

**SITE 5 SURFACE SOIL SAMPLES**

| PARAMETER | MEDIA | NO. OF SAMPLES | SAMPLE LOCATIONS |
|---|---|---|---|
| TCL volatiles | soil | 1 | SB03 |
| TCL semi-volatiles | soil | 1 | SB03 |
| TCL pesticide/PCBs | soil | 1 | SB03 |
| TAL metals/cyanide | soil | 1 | SB03 |
| TPH (low boiling point) | soil | 1 | SB03 |
| TPH (medium/high boiling point) | soil | 1 | SB03 |
| Oil and grease | soil | 1 | SB03 |

"

## 5.0 SAMPLING EQUIPMENT AND PROCEDURES

Add the following after the existing text:

"Additional soil samples will be collected in the manner described below in this addendum. Concrete samples will be collected in accordance with the original Work Plan Addendum dated March 16, 1994."

## 5.1 SOIL

Add the following after the existing text:

"Soils will be sampled using a decontaminated hand driven bucket auger or sampling trowel at each location to a maximum depth of 1-foot below ground surface. Where concrete is present the soil sample will be collected to a depth of 1-foot below the soil/concrete interface. Following sampling, all soil will be immediately placed into its sample container for labeling and packaging. Any unused soil will be returned to the

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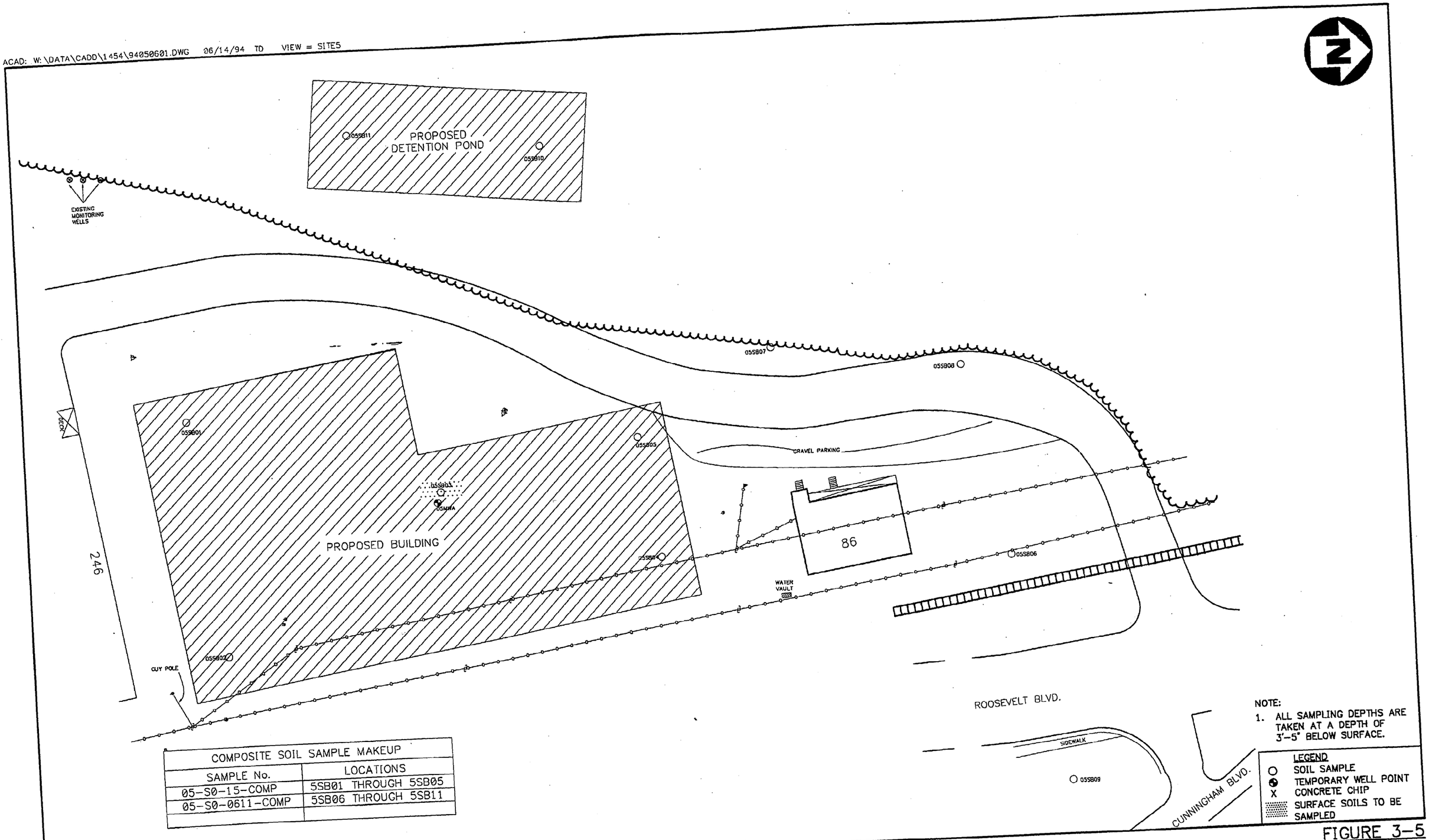


| COMPOSITE SOIL SAMPLE MAKEUP | |
|---|---|
| SAMPLE No. | LOCATIONS |
| 05-S0-15-COMP | 5SB01 THROUGH 5SB05 |
| 05-S0-0611-COMP | 5SB06 THROUGH 5SB11 |
| | |

NOTE:
1. ALL SAMPLING DEPTHS ARE TAKEN AT A DEPTH OF 3'-5" BELOW SURFACE.

LEGEND
- O SOIL SAMPLE
- TEMPORARY WELL POINT
- X CONCRETE CHIP
- SURFACE SOILS TO BE SAMPLED

FIGURE 3-5

0 50 100
SCALE IN FEET

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SITE 5 (MCON P-962T)
SITE MAP
MCAS CHERRY POINT, NORTH CAROLINA

boring from which it originated. All locations will be returned to their preinvestgation appearance by finishing with gravel, asphalt cold patch, or concrete seal."

## APPENDIX B - QUALITY ASSURANCE PROJECT PLAN

### 3.0 SAMPLE MATRICES, PARAMETERS, AND FREQUENCY OF COLLECTION

Add new Table 3-1 F to this section.

## TABLE 3-1F

## ANALYTICAL PROGRAM FOR ADDITIONAL SAMPLING
## MCAS CHERRY POINT, NORTH CAROLINA

| Parameter(1) | Method(2) | Sample Type | No. of Locations | Total Trip Blanks(3) | Total Equipment Rinsates(4) | Total Field Blanks(5) | Total Field Duplicates(6) | Total No. of Samples (including QC) |
|---|---|---|---|---|---|---|---|---|
| TCL Volatiles | SW846-Method 8260 | Soil | 10 | 5 | 3 | 1 | 1 | 20 |
| TCL semi-volatiles | CLP SOW OLM01.8 | Soil | 13 | N/A | 3 | 1 | 2 | 19 |
| TCL Pesticide/PCBs | CLP SOW OLM01.8 | Soil | 21 | N/A | 3 | 1 | 3 | 28 |
| TAL metals/cyanide | CLP SOW ILM02.1 | Soil | 11 | N/A | 3 | 1 | 1 | 16 |
| TPH (low to medium boiling point) | SW-846 5030/8015 | Soil | 10 | 5 | 3 | 1 | 1 | 20 |
| TPH (high boiling point) | SW-846 3550/8015 | Soil | 10 | N/A | 3 | 1 | 1 | 15 |
| Oil and Grease | SW-846 9071 | Soil | 10 | N/A | 3 | 1 | 1 | 15 |
| TCLP organics and metals | SW-846 1311 and 40CFR 261 | Soil | 1 | 0 | 0 | 0 | 0 | 1 |

(1) TAL - Target Analyte List: TCL - Target Compound List

(2) Methodology as per the latest updates or revisions to the Contract Laboratory Program Statement of Work, Test Method for Evaluating Solid Waste (SW846), or 40 CFR 261.

(3) Trip Blanks - Samples which originate from analyte free water taken from the laboratory to the sampling site and returned to the laboratory with the volatile organic compound samples. One trip blank per cooler containing VOC samples. Trip blanks are analyzed for VOCs only.

(4) The rinsate blank indicated for the surface soil samples represents a sample acquisition blank (i.e. analyte free water run over the sampling tool before use). Rinsate blanks are collected at a frequency of 1/sampling train/day. Per NEESA guidelines (20.2-047B: 6/8?88) only rinsates from every other day will be analyzed unless significant levels of contaminants are noted. Those rinsate blanks to be "held" will be marked accordingly on the chain of custody forms.

(5) Obtained at a frequency of 1/source/event. Consists of water sources used for decontamination. A sample of analyte-free water used to collect the rinsate blanks for the soils shall be collected as a field blank and analyzed for soil aqueous analytical parameters.

(6) Field Duplicates - A single sample split into two portions during a single act of sampling. Assesses the overall precision of the sampling and analysis program. Obtained at a frequency of 10% of the number of samples.